

wherein the sensor region is arranged to be adjacent to at least a part of the actuator region or surround a circumference of the actuator.

14. The method for manufacturing a sensor integrated haptic device of claim **13**,

wherein the step of forming lower electrodes includes: forming a sacrificial layer in the sensor region and the actuator region;

forming cantilever or bridge-shaped lower electrodes on a region of an upper surface of the substrate adjacent to the sacrificial layer formed in the actuator region and on an upper surface of the sacrificial layer formed in the actuator region; and

forming an electrode contact integrated with the lower electrode of the actuator, and

the step of forming upper electrodes further includes: forming an electrode contact integrated with the upper electrode of the actuator.

15. The method for manufacturing a sensor integrated haptic device of claim **14**, further comprising:

removing the sacrificial layer from the actuator region after the step of forming upper electrodes.

16. The method for manufacturing a sensor integrated haptic device of claim **13**,

wherein the step of stacking ionic elastomer layers on the lower electrodes includes:

stacking an ionic elastomer on upper surfaces of the substrate, the lower electrode of the sensor, and the lower electrode of the actuator; and

removing the ionic elastomer except the ionic elastomer positioned on the upper surface of the lower electrode of the sensor and the upper surface of the lower electrode of the actuator.

17. An electronic device including a sensor integrated haptic device, comprising:

multiple sensor integrated haptic devices each including a sensor and an actuator formed to be arranged on a same plane as the sensor;

a power supply line configured to supply power to each actuator; and

a transmission line configured to transmit a sensing voltage to each sensor,

wherein each of the sensor and the actuator includes a lower electrode formed through a first process, an ionic elastomer layer formed on the lower electrode through a second process, and an upper electrode formed on the ionic elastomer layer through a third process.

18. The electronic device of claim **17**, wherein the sensor is formed to surround a circumference of the actuator.

19. The electronic device of claim **17**, wherein the sensor is formed to be arranged close to one side surface of the actuator.

20. The electronic device of claim **17**, wherein the actuator has one of a cantilever shape supported by one self-supporting post anchored on the substrate and a bridge-shape supported by two self-supporting posts anchored on the substrate.

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